

Zimmermannia heringiella nov. spec.
Nepticulidae (Lepidoptera)

by
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Female (fig. 3) : head, collar and face deep velvety-black ; labial and maxillary palpi pale yellow ; antennae pale yellow, above with broad, grey annulations, so that the grey colour predominates, but underneath they are always pale yellow, sometimes with narrow grey annulations ; the large eye-caps are creamy-white ; forepart of thorax pale yellow, hindpart blackish-violet ; tegulae pale yellow ; abdomen above shiny greyish-violet, underneath pale yellow ; legs gleaming pale yellow, tibiae exteriorly with some blackish-violet scales, posterior tibiae above with two rows of spines, interior ones very long and strong ; forewings pale yellow, densely and irregularly dusted with blackish-violet scales ; these scales form a nearly round patch on the dorsum near the base and a short streak along the costa at the base while the apical half is all over sprinkled with them ; no sign of light spots on costa or tornus ; hind wings light grey ; cilia grey, on the fore wings whitish tipped at termen and with a conspicuous row of blackish-violet scales ; underside of fore wings yellowish-grey, hind wings dark grey.



Fig 1. Genitalia of male, ventral view.

Fig. 2. Genitalia of male, lateral view.

Male : the only male I elevated has the fore wings wholly covered with blackish-violet scales and their underside is dark grey ;

the legs and belly are also darker than those of the female while the antennae above and underneath have distinct grey annulations.

Alar expansion of female: 8 mm, fore wing $3\frac{1}{2}$ mm; male 7 mm f. wing 3 mm.

Larva yellow, head brown. Cocoon reddish-brown, hairy, oval, 3 mm long and 2 mm broad.

Genitalia of male (fig. 1 and 2) same habitus as *Nepticula* species; uncus arched obtusely pointed; scaphium absent; subscaphium convergent; valvae large, arched, sharply pointed, the upper part with strong bristles; base of aedoeagus very broad and a broad patch of chitinous triangles (not figured in figure I); saccus slightly curved.

The larva makes mines in the still smooth bark of branches of *Quercus robur* L. I found the mines in branches which had a diameter from one till two cm and exclusively in bushes, never in big trees.

The insects are noxious to the tree, for the bark of old mines cracks and exposes the inner bark. The mines (fig. 3) are very long and sinuous, intestine-like. They begin with a narrow track which widens gradually and they are sometimes so intricate that it is very difficult to indicate the beginning and the end of them. Although I examined the empty mines very closely, I never succeeded in observing either the empty egg-shell or the opening by which the larva left the mine.

Near Hollandsche Rading (prov. North Holland) the species is rather common. In 1943 I saw there already the mines, but they were all empty. On the 25th of June 1946, however, I found there several mines which looked very promising. After having cut off the part of the branches in which the mines were found, I put them in a big glass jar and from 5 till 10 July I found five larvae and three cocoons in the jar. The larvae like to make their cocoons on the ground under moss and then cover them all over with grains of sand.

From 10 till 15 August four females and one male emerged. They left their cocoons between 5 and 6 in the afternoon. Between the the chrysalis and those of *Nepticula* species, I do not see much difference.

Mr. V á r i found last summer the mines also at Hulshorst (prov. Guelders). Most probably the species occurs all over the country where the food grows.

The moth is nearly related to *Zimmermannia liebwerdella* Zimm. (Mitt. Zool. Mus. Berlin. 1940, page 264 with postscript of Prof. Hering), but this species has the fore wings wholly covered with blackish-violet scales, except two pale yellow patches, one at two thirds on the costa and one opposite on the tornus while the thorax and tegulae are wholly blackish-violet. It makes mines in the bark of branches of *Fagus silvatica* L. which are much shorter than those of the oak-species. Alar expansion 8 mm.

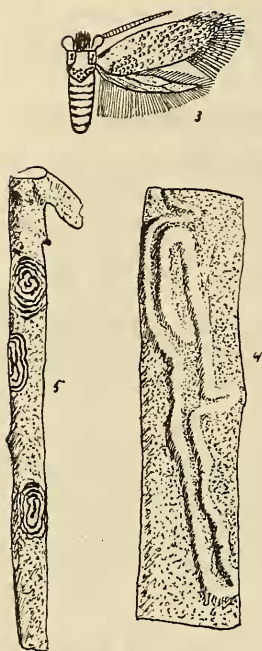


Fig. 3. Imago, female of *Zimmermannia heringiella* n.sp.

Fig. 4. Mine of *Zimmermannia heringiella* n.sp. in bark of *Quercus robur* L.

Fig. 5. Mines of *Ectoedemia (Zimmermannia) heinrichi* Busk in bark of *Quercus palustris* Duroy.

A second species to which it is related, is *Ectoedemia (Zimmermannia) heinrichi* Busk, which is found in some parts of North America (Proc. Ent. Soc. Washington, 1914, page 149, with a photo of the mine). This species has an expansion of 9 to 10 mm; the fore wings are dusted with blackish-fuscous scales which are arranged nearly in the same way as the blackish-violet scales on the fore wings of the new species. It makes very narrow mines which resemble "a compressed watchspring" in the saplings of *Quercus palustris* Duroy (fig. 5).

Prof. Hering has already mentioned the mines of this european oak-species in "Zeitschr. für Pflanzenkrankh." 44, 1934. page 61, No. 21 and in his "Blattminen Mittel- und Nord-europas" page 419.

In the Sudetes and Elbe-valley in Germany, it is rather common. As Busk observed the larvae leaving their mines from Oct. 24 till Nov. 5 and the forced cocoons yielded moths in March while Zimmermann and I elevated the imagoes in summer, I think it most probable that the genus has two generations.

If this species has not yet received a name (it is not possible to have any entomological news from Germany), I propose to name it "*heringiella*" in honour of the eminent Prof. E. M. Hering who first detected the mines.

Finally I wish to express my warmest thanks to Dr. G. Kruseman for his generous help and to Mr. L. Vári who willingly made the preparation and drew the excellent figures of the genitalia.

Hilversum.